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#9



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OIPE

RAW SEQUENCE LISTING

5 <110> APPLICANT: Tomb, Jean-Francois

PATENT APPLICATION: US/10/007,527A

DATE: 06/28/2002 TIME: 11:20:06

Input Set : A:\CL1709 US NA SEQ.txt

Output Set: N:\CRF3\06282002\J007527A.raw

```
6
              Bramucci, Michael G.
      7
              Cheng, Qiong
      8
              Kostichka, Kristy N.
     11 <120> TITLE OF INVENTION: Rhodococcus Cloning and Expression Vectors
     14 <130> FILE REFERENCE: CL1709 US NA
C--> 17 <140> CURRENT APPLICATION NUMBER: US/10/007,527A
C--> 17 <141> CURRENT FILING DATE: 2001-12-05
     17 <150> PRIOR APPLICATION NUMBER: 60/254,868
     18 <151> PRIOR FILING DATE: 2000-12-12
     21 <160> NUMBER OF SEQ ID NOS: 30
     24 <170> SOFTWARE: Microsoft Office 97
     27 <210> SEQ ID NO: 1
     29 <211> LENGTH: 1140
     31 <212> TYPE: DNA
     33 <213> ORGANISM: Rhodococcus AN12
     37 <400> SEQUENCE: 1
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     40 tecgataage geggeateeg geacgaactg egacecaaac tteaacaaat caccaegtea
                                                                              120
     42 gaaacattta acgcctgtgg ccggccgatt tctggcgtga acggtgtgac cattgtcaac
                                                                              180
     44 ggtccgaaag gttctggatt cggaggcctt cgttcctgcg gaaagggctg gatctgcccc
                                                                              240
     46 tgctgtgcgg gaaaagtcgg tgcacatcgt gcagacgaaa tttctcaagt tgttgctcat
                                                                              300
     48 caacteggga etggatetgt tgegatggtg acgatgacea tgegecatae agetggteag
                                                                              360
     50 cggctccacg acctatggac tggactttcg gcagcctgga aagctgcgac caacggtcgt
                                                                              420
                                                                              480
     52 cgttggcgta cggaacgtga aatgtacggc tgcgacggat acgtgcgcgc tgttgaaatc
     54 acteaeggaa aaaaeggetg geaegteeae gtteaegege taeteatgtt eagtggtgae
                                                                              540
     56 gtgagtgaga acatectega atectteteg gatgegatgt tegateggtg gaettecaaa
                                                                              600
                                                                              660
     58 ctcgtatctc tgggatttgc tgcgccacta cgtaattcgg gtggtctcga tgtacgaaag
                                                                              720
     60 atcggcggtg aagctgatca agttctcgct gcgtatctga cgaaaattgc atctggcgtt
                                                                              780
     62 ggtatggagg ttggtagtgg cgacggaaaa agtggtcgac atggcaaccg tgcaccctgg
                                                                              840
     64 qaaatcqctq ttgatgcagt gggcggggat ccacaagcgt tggaactgtg gcgagaattt
                                                                              900
     66 gagtttggtt cgatgggacg tcgggcaatc gcgtggtccc gtggattgcg tgcccgagct
     68 ggtcttgggg cagaactaac agatgctcag atcgttgagc aggaagaatc tgccccggtc
                                                                              960
    70 atggttgcga tcattccggc gcgatcgtgg atgatgattc ggacttgtgc gccttacgtc
                                                                             1020
                                                                             1080
    72 ttcggcgaga tcctcggact cgtcgaagct ggcgcgactt gggaaaatct tcgtgatcac
     74 ttgcattatc gattgcccgc agcggatgtg cggcccccga taatatcggt tcgcaagtga
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     77 <210> SEO ID NO: 2
    79 <211> LENGTH: 379
     81 <212> TYPE: PRT
    83 <213> ORGANISM: Rhodococcus AN12
    87 <400> SEQUENCE: 2
    89 Met Thr Ser Val Ser Ala Glu His Leu Ser Gly Lys Asp Arg Pro Pro
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90 1

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93 Val Leu Val Ser Ser Asp Lys Arg Gly Ile Arg His Glu Leu Arg Pro
97 Lys Leu Gln Gln Ile Thr Thr Ser Glu Thr Phe Asn Ala Cys Gly Arg
                               40
101 Pro Ile Ser Gly Val Asn Gly Val Thr Ile Val Asn Gly Pro Lys Gly
                            55
105 Ser Gly Phe Gly Gly Leu Arg Ser Cys Gly Lys Gly Trp Ile Cys Pro
109 Cys Cys Ala Gly Lys Val Gly Ala His Arg Ala Asp Glu Ile Ser Gln
                    85
113 Val Val Ala His Gln Leu Gly Thr Gly Ser Val Ala Met Val Thr Met
                                    105
117 Thr Met Arg His Thr Ala Gly Gln Arg Leu His Asp Leu Trp Thr Gly
           115
                                120
121 Leu Ser Ala Ala Trp Lys Ala Ala Thr Asn Gly Arg Arg Trp Arg Thr
        130
                            135
125 Glu Arg Glu Met Tyr Gly Cys Asp Gly Tyr Val Arg Ala Val Glu Ile
                        150
                                            155
129 Thr His Gly Lys Asn Gly Trp His Val His Val His Ala Leu Leu Met
                                        170
                    165
133 Phe Ser Gly Asp Val Ser Glu Asn Ile Leu Glu Ser Phe Ser Asp Ala
                                    185
137 Met Phe Asp Arg Trp Thr Ser Lys Leu Val Ser Leu Gly Phe Ala Ala
           195
                                200
                                                    205
141 Pro Leu Arg Asn Ser Gly Gly Leu Asp Val Arg Lys Ile Gly Gly Glu
                            215
145 Ala Asp Gln Val Leu Ala Ala Tyr Leu Thr Lys Ile Ala Ser Gly Val
                        230
                                            235
149 Gly Met Glu Val Gly Ser Gly Asp Gly Lys Ser Gly Arg His Gly Asn
                    245
                                        250
153 Arg Ala Pro Trp Glu Ile Ala Val Asp Ala Val Gly Gly Asp Pro Gln
                260
                                    265
157 Ala Leu Glu Leu Trp Arg Glu Phe Glu Phe Gly Ser Met Gly Arg Arg
                                280
161 Ala Ile Ala Trp Ser Arg Gly Leu Arg Ala Arg Ala Gly Leu Gly Ala
165 Glu Leu Thr Asp Ala Gln Ile Val Glu Glu Glu Glu Ser Ala Pro Val
                        310
                                            315
169 Met Val Ala Ile Ile Pro Ala Arg Ser Trp Met Met Ile Arg Thr Cys
                                        330
                    325
173 Ala Pro Tyr Val Phe Gly Glu Ile Leu Gly Leu Val Glu Ala Gly Ala
                340
                                    345
177 Thr Trp Glu Asn Leu Arg Asp His Leu His Tyr Arg Leu Pro Ala Ala
      355
                                360
181 Asp Val Arg Pro Pro Ile Ile Ser Val Arg Lys
                            375
        370
185 <210> SEQ ID NO: 3
187 <211> LENGTH: 891
189 <212> TYPE: DNA
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Input Set: A:\CL1709 US NA SEQ.txt
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191 <213> ORGANISM: Rhodococcus AN12
195 <400> SEQUENCE: 3
196 atggatcaaa cagacacgat cccgattgcg attggatgga acgaactagc tcaacctgtc
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198 atggtcgata tagccaaaga tgctgctcac tggctcattc aaggcaaaac ccgttccgga
                                                                          120
200 aaateteaat geacetacaa eetgetegea eaggetggat egaateeege tgtgegtgte
                                                                          180
202 gtcggagtcg atcccacttc cgtcttacta gccccattcg tccaccgacg accggctgaa
                                                                          240
204 ccgaacatcg agctcgggct gaacgatttt gacaaagtcc tccgagtgct ccagttcgtc
                                                                          300
206 aaagcagaat ctgaccgacg aatcgagtgt ttctgggatc gacgcataga caaaatttcg
                                                                          360
208 ttqttctcqc caqcactacc tctcatcctq ctcqtactqq aagaatttcc cggaatcatc
                                                                          420
210 gagggcgcac aggatttcga tgcaaccaac ggtctgaaac cagcagacag atacgcaccc
                                                                          480
212 cgcatcacat cgcttgttcg acagatcgct gctcagtctg ccaaagcagg catcagaatg
                                                                          540
214 ttgctcttgg ctcaacgtgc ggaagcttcc atcgtgggtg gaaacgcccg ctcgaacttc
                                                                          600
216 geggtgaaaa tgacteteeg egtagaegaa cetgaatetg teaaaatget geaceceaae
                                                                          660
218 gcaacacctg aagagtgcgc actggtcgaa ggattcgtcc ctggtcaagg cttcttcgac
                                                                          720
220 caacceggac tacggegeca aatgateega acggttegeg taggtgagta etegacetae
                                                                          780
222 gegagttaeg tegaaaaege agaeetegeg taegaageeg eaetgaaeat egaeegagea
                                                                          840
224 caacgaatga caatcgcctc ggaataccca catctcggcg acataggctg a
                                                                          891
227 <210> SEQ ID NO: 4
229 <211> LENGTH: 296
231 <212> TYPE: PRT
233 <213> ORGANISM: Rhodococcus AN12
237 <400> SEQUENCE: 4
239 Met Asp Gln Thr Asp Thr Ile Pro Ile Ala Ile Gly Trp Asn Glu Leu
240 1
                                         10
243 Ala Gln Pro Val Met Val Asp Ile Ala Lys Asp Ala Ala His Trp Leu
                                     25
247 Ile Gln Gly Lys Thr Arg Ser Gly Lys Ser Gln Cys Thr Tyr Asn Leu
248
251 Leu Ala Gln Ala Gly Ser Asn Pro Ala Val Arg Val Val Gly Val Asp
252
255 Pro Thr Ser Val Leu Leu Ala Pro Phe Val His Arg Arg Pro Ala Glu
256 65
                                             75
                        70
259 Pro Asn Ile Glu Leu Gly Leu Asn Asp Phe Asp Lys Val Leu Arg Val
263 Leu Gln Phe Val Lys Ala Glu Ser Asp Arg Ile Glu Cys Phe Trp
264
                100
                                    105
267 Asp Arg Arg Ile Asp Lys Ile Ser Leu Phe Ser Pro Ala Leu Pro Leu
268
            115
                                120
271 Ile Leu Leu Val Leu Glu Glu Phe Pro Gly Ile Ile Glu Gly Ala Gln
272
                            135
                                                 140
275 Asp Phe Asp Ala Thr Asn Gly Leu Lys Pro Ala Asp Arg Tyr Ala Pro
                        150
                                             155
279 Arg Ile Thr Ser Leu Val Arg Gln Ile Ala Ala Gln Ser Ala Lys Ala
280
                    165
                                         170
283 Gly Ile Arg Met Leu Leu Ala Gln Arg Ala Glu Ala Ser Ile Val
284
                180
                                    185
287 Gly Gly Asn Ala Arg Ser Asn Phe Ala Val Lys Met Thr Leu Arg Val
                                200
                                                     205
291 Asp Glu Pro Glu Ser Val Lys Met Leu His Pro Asn Ala Thr Pro Glu
```

Input Set : A:\CL1709 US NA SEQ.txt
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```
292
        210
                            215
                                                 220
295 Glu Cys Ala Leu Val Glu Gly Phe Val Pro Gly Gln Gly Phe Phe Asp
296 225
                        230
                                             235
299 Gln Pro Gly Leu Arg Arg Gln Met Ile Arg Thr Val Arg Val Gly Glu
                                         250
300
                    245
303 Tyr Ser Thr Tyr Ala Ser Tyr Val Glu Asn Ala Asp Leu Ala Tyr Glu
304
                260
                                     265
307 Ala Ala Leu Asn Ile Asp Arg Ala Gln Arg Met Thr Ile Ala Ser Glu
308
            275
                                 280
                                                     285
311 Tyr Pro His Leu Gly Asp Ile Gly
        290
312
315 <210> SEQ ID NO: 5
317 <211> LENGTH: 6334
319 <212> TYPE: DNA
321 <213> ORGANISM: Rhodococcus AN12
325 <400> SEQUENCE: 5
326 attcagacca acaatcagtc caactagcaa ggcgacaacc ggtatcgcaa ttcgtgaaac
                                                                           60
328 aagetttgte atgegteege getettaega geaggtgegg agaeggeege tgeaggeatt
                                                                          120
330 ggaaccaaat tetecaetgt gatggatagt gegagaegat eeatgeeagt eatgtaggge
                                                                          180
332 tgcacccaqa caaggcette tgctcggtag atcgtgccga agctgaacgg ctcgttcggc
                                                                          240
334 gggttgatga cgtgcacgga tgctgtcttg tcagtcgcaa cagttccgtc cttgcgtgca
                                                                          300
336 actoggagoa atgogocagt ogaatactto acaoggoogt ogggagtgag ottgtootga
                                                                          360
338 accggcttga tggggtcgtc cataccggct acgaacaccg ggaactgatc agcggtagtt
                                                                          420
340 gegaegggga gggaegttee gagetgaaca tteatgegag tteetttgat egaggetggt
                                                                          480
342 acagettatg teteeggtgt ceatatteag egacaegegt teatetaeae teaaaaeegt
                                                                          540
                                                                          600
344 acacatagty tagccagety tecaytttte geacactacy ttagcaacty aacatatttt
346 gtggttgatc agtcaataag ctgtccatat ggacgagaaa gaggttcgcg cgatgattca
                                                                          660
348 gegcaaagaa accgaacgaa aaatgcaggt catcaagcag gegteegtgg atetgteaca
                                                                          720
                                                                          780
350 ctcctggcag accattcaga acgcgcacga ctccacgact gtcgcaatgg agctacgaga
                                                                          840
352 ageegggett caacgegaat tetggetaca agetetegeg gacateacat etgttgtggg
354 aactgootot gagotgogoa aatotattto cogttttoto gttgacgago ttgacgtcag
                                                                          900
356 cagccgaacc gttgccaccg ttgcagatgt ttcaccgtcg accatcagta cttggcgtgg
                                                                          960
                                                                         1020
358 tgagcatgag tcatcgtaaa aacatcctct gacctgctat ggccccaatg atcacctatt
360 accaaggegg eggettegee geegetgeea geaggeteee ceaectaege geteegette
                                                                         1080
362 gctcqcqctt cqqtqctccq cccqcaqqcc caqqaqcqaq tttqcqcctc qtttaqtcca
                                                                         1140
364 totaaggggt tootagotgg ottgaggtog caacgcatco tgaagtogat cgaggagcag
                                                                         1200
366 gaacgcatca tetegateca gegtggttte ttgaccataa ategagaggt acaegeecat
                                                                         1260
368 gacaacgeca tegaegteta eegaagetgg attegetgeg atgeeaagag gaegttegtt
                                                                         1320
370 gatgctcatg tgatgggttt acctgcaaaa atagtcagca gccaaatcgg aggcggcggc
                                                                         1380
                                                                         1440
372 ttegeegeeg etgeeageag geteeeceae etaegegete egettegete gegetteggt
374 geteegeeeg caggeeeagg agegagtttg egeetegttt agteeateta aggggtteet
                                                                         1500
376 agctqqcttq agqtcqcaac gcatcctqaa gtcqatcqaq gagcaggaac gcatcatctc
                                                                         1560
378 gatccagcgt ggtttcttga ccataaatcg agaggtacac gcccatgaca acgccatcga
                                                                         1620
380 cgtctaccga agctggattc gctgcgatgc caagaggacg ttcgttgatg ctcatgtgat
                                                                         1680
382 gggtttacct gcaaaaatag tcagcagcca aatcggccgg cctttttcta tctgcccggt
                                                                         1740
384 cagececeeg agaecaaeca tgaaaeagge egtetetetg teaaggeeaa geegetaege
                                                                         1800
386 ggtgctatcg cagccctgac agagagacac ccagcttcag agcggcaagt atcgggggga
                                                                         1860
388 tgccctcaaq tgtgqttcat gcgqqtqaaa gttqttgctc agcaacqctt ttcacttgcg
                                                                         1920
390 aaccqatatt atcqqqqqcc qcacatccqc tqcqqqcaat cqataatqca aqtqatcacq
```



Input Set : A:\CL1709 US NA SEQ.txt
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392	aagattttcc	caagtcgcgc	cagcttcgac	gagtccgagg	atctcgccga	agacgtaagg	2040
394	cgcacaagtc	cgaatcatca	tccacgatcg	cgccggaatg	atcgcaacca	tgaccggggc	2100
396	agattcttcc	tgctcaacga	tctgagcatc	tgttagttct	gccccaagac	cagctcgggc	2160
398	acgcaatcca	cgggaccacg	cgattgcccg	acgtcccatc	gaaccaaact	caaattctcg	2220
400	ccacagttcc	aacgcttgtg	gatccccgcc	cactgcatca	acagcgattt	cccagggtgc	2280
402	acggttgcca	tgtcgaccac	tttttccgtc	gccactacca	acctccatac	caacgccaga	2340
404	tgcaattttc	gtcagatacg	cagcgagaac	ttgatcagct	tcaccgccga	tctttcgtac	2400
406	atcgagacca	cccgaattac	gtagtggcgc	agcaaatccc	agagatacga	gtttggaagt	2460
408	ccaccgatcg	aacatcgcat	ccgagaagga	ttcgaggatg	ttctcactca	cgtcaccact	2520
410	gaacatgagt	agcgcgtgaa	cgtggacgtg	ccagccgttt	tttccgtgag	tgatttcaac	2580
				ttcacgttcc			2640
414	ggtcgcagct	ttccaggctg	ccgaaagtcc	agtccatagg	tcgtggagcc	gctgaccagc	2700
416	tgtatggcgc	atggtcatcg	tcaccatcgc	aacagatcca	gtcccgagtt	gatgagcaac	2760
418	aacttgagaa	atttcgtctg	cacgatgtgc	accgactttt	cccgcacagc	aggggcagat	2820
420	ccagcccttt	ccgcaggaac	gaaggcctcc	gaatccagaa	cctttcggac	cgttgacaat	2880
422	ggtcacaccg	ttcacgccag	aaatcggccg	gccacaggcg	ttaaatgttt	ctgacgtggt	2940
424	gatttgttga	agtttgggtc	gcagttcgtg	ccggatgccg	cgcttatcgg	acgacacgag	3000
426	gacgggaggc	cggtctttgc	cggaaaggtg	ttcagcactt	acgctggtca	taacgagcgg	3060
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				catcaaccct			3600
				cgtcgtagac			3660
				acttcggccg			3720
				ggtgctcatg	_		3780
			-	ctccctcgct		_	3840
		-		cgtcactggc			3900
				ctagaagcag	-	-	3960
	-	-		gtgcaccaag			4020
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	-			ctgatttgat			4140
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				cattttgaca			4560
				ggcgtttcca		-	4620
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VERIFICATION SUMMARY

PATENT APPLICATION: US/10/007,527A

DATE: 06/28/2002 TIME: 11:20:07

Input Set : A:\CL1709 US NA SEQ.txt

Output Set: N:\CRF3\06282002\J007527A.raw

L:17 M:270 C: Current Application Number differs, Replaced Current Application No

L:17 M:271 C: Current Filing Date differs, Replaced Current Filing Date